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DEMOGRAPHIC CHANGE AND THE CANADIAN ECONOMY: AN OVERVIEW

by

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Introduction

Demographic considerations play a key role in the broader Canadian socio-economic context. The rate of growth and the structure of the population have influenced the size and composition of the labour force and the overall productive capacity of the economy. The aging of the population has far-reaching implications for the cost and nature of social programs and the ability of the economy to adjust to change. The changing role and status of women, along with the emergence of a wide range of family types, has altered the nature of the labour force and is exerting pressure on governments to provide social services such as adequate child care. Finally, the volume and source of immigration flows have altered not only economic variables such as the growth and skill composition of the labour force, but also the ethnic and cultural fabric of society.

Recognizing the need to develop a better understanding of the impact of demographic change on economic and social trends, the federal government in May 1986 launched a three-year Review of Demography and its Implications for Economic and Social Policy (the Demographic Review), the results of which will be reported to the Minister of Health and Welfare. At the request of the federal government, the Institute for Research on Public Policy participated in the first phase of the Review during the latter half of 1986 and assumed responsibility for studying the relationship between demographic change and the economy. The Institute's mandate was to review the state of knowledge with respect to emerging demographic trends and to assess the implications of these trends for the Canadian economy. The Institute took a systems approach to this work and elaborated a conceptual framework to describe the relationships being explored (see Figure 1). Twelve issues or review papers were commissioned or conducted in-house by the Institute (see References). In November 1986, the Institute organized a workshop involving the authors of the papers and government officials. The goals of the workshop were to discuss and assess each paper, to refine the conceptual framework incorporating the major interrelationships between demographic and economic variables, and to establish priorities for future research.

This overview is based on the research and ideas elaborated in the 12 papers, on the discussions and recommendations of the November 1986 workshop, and on the Institute's own background work in this area. Part One sets the stage for a discussion of demographic-economic interrelations by briefly describing some of the current and future challenges facing the Canadian economy and the importance of demographic change in this context. Part Two reviews, at the aggregate level, the major demographic trends since World War II, with particular emphasis on emerging developments over the past decade. Part Three examines the changing composition of the population and the labour force, in terms of broad, macro-level trends that influence the overall economy, as well as more detailed elements, including the demographic profiles of the labour force engaged in

different occupations. Part Four assesses the behavioural aspects of one particularly dramatic demographic change – increased female labour force participation – and relates this not only to fertility and social change but also to economic developments over the past decade.

Part Five provides projections of the population and labour force from 1986 to 2036, focusing on the major expected trends to the end of the century. Part Six assesses the implications of recent and projected demographic changes for the economy in the late 1980s and the 1990s, particularly the potential adjustment and productivity problems associated with a labour force that is aging and growing more slowly, and the effects of demographic forces on the demand for public and private goods and services. Finally, the concluding part of the Overview describes the major gaps in our understanding of demographic-economic interrelations and suggests areas for further research. While this section is informed by the recommendations of the researchers, both in their papers and as participants in the November 1986 workshop, the final suggestions regarding research priorities are the responsibility of the author and, to a certain extent, reflect past, current and potential future research areas included in the Institute's own work.

The Overview demonstrates that there is a good understanding of major recent demographic trends in Canada and that some of these trends can be projected with reasonable confidence to the end of the century. Thus, it is expected that the rate of growth of the population and labour force will continue to decline, that further aging of the population and labour force will occur, that the proportion of elderly members of the population will increase as the proportion of young members decreases, and so on. Furthermore, at an overall level, there is some understanding of the likely implications of these trends for the Canadian economy, at least in terms of broad measures such as dependency ratios.

By contrast, there is a serious lack of knowledge and research on demographic-economic interrelations at a more disaggregated level. For example, the implications of demographic change and variation at the regional and sectoral level, particularly in terms of the economy's capacity to adapt, is largely uncharted territory. Similarly, the behavioural aspects of demographic change – such as the interrelationships between fertility, female labour force participation and the changing family – and their implications for the economy are only beginning to be explored. These observations lead to recommendations for further research focusing on detailed, empirical investigation at the sectoral, regional and household level. It is this kind of research that is most likely to be relevant for policy and planning purposes to the end of the century.

Part One Demographic-Economic Interrelations: The Canadian Context

In order to appreciate the significance of changing demographic trends – particularly from an economic perspective – it is useful to reflect briefly on the major economic and demographic changes that have occurred in Canada in recent years.

Over the past decade, the national economy has been characterized by declining growth in productivity, rising unemployment, and falling standards of living. While some

improvements have occurred since the 1981-1982 recession, productivity growth remains minimal, and unemployment – particularly for young adults – remains high. Underlying these macro-level indicators of economic performance are a number of structural changes at the regional and industrial level, including the decline in resource-producing and agricultural industries and regions as prices for primary commodities such as oil, gas and grain have fallen; the rapid pace of technological change, which has resulted, in certain manufacturing industries, in large capital investments that increase productivity but have relatively little impact on employment; and the growing importance of the service sector of the economy.

At the same time, the 1970s and 1980s have witnessed the increasing integration and interdependence of the global economy, characterized by higher levels of trade and a more complex range of trading relations; accelerated technology transfer; and substantially greater international capital flows. To an increasing extent, international competitiveness has become linked with domestic economic growth. To survive economically in this context, Canada must meet difficult challenges in terms of labour and industrial adjustment.

These stresses on the Canadian economy have been accompanied by major demographic changes. Particularly important are the maturing of the large and relatively well-educated baby boom generation, which has now reached labour force age; declining fertility since the early 1960s which first slowed the rate of growth of the population and is now affecting the labour force; the gradual aging of the population, along with a growing proportion of the elderly who are dependent on publicly provided income and services; the increasing labour force participation of women, particularly in the service sector; dramatically changing family structures, with two-parent, one-earner, two-child households no longer the norm; major fluctuations in gross immigration levels, which were relatively high in the open-door policy years of the 1950s and 1960s and much lower in the first half of the 1980s.

The interrelationships between these demographic and economic trends are complex. However, as will be illustrated below, the implications of demographic change for the economy are potentially very significant, particularly in terms of the economy's capacity to be competitive and productive. First, to what extent will the Canadian labour force be able to adapt in a changing economic environment, and what are the prospects for increasing labour productivity growth? It can be argued that the progression of the baby boom generation through the labour market, at least over the next 10 to 15 years, should enhance labour productivity and economic growth. It is reasonable to expect that returns on society's prior investments in education and training provided to this generation should be high, particularly as its members gain experience and become more productive. However, one counter-argument is that these expected returns may be eroded if the type of educational investments made in the past are inappropriate to future needs or if the recent (and continuing) unemployment experience of these individuals prevents them from gaining the necessary experience.

The capacity of the economy to adapt may also be influenced by the dramatic slow-down in the growth of the labour force and the smaller number of young labour market entrants who will be available in the late 1980s and 1990s. Since young entrants are

assumed to be the most mobile and adaptable members of the labour force, the adjustment process may be impeded if there are smaller numbers of these recruits. Furthermore, while the presence of the well-educated baby boom generation may have a positive influence at the macro level, there are significant imbalances reflected in the demographic profiles of different industrial sectors of the economy. Preliminary evidence suggests that some of the industries that are most likely to be threatened by structural change are also characterized by a labour force that is older and perhaps less mobile than the national average. This will make the reallocation of resources more difficult and the costs of adjustment higher. These concerns point to the importance of labour market policies, such as training and mobility assistance, that facilitate adjustment. In this context, immigration is potentially very important, not only in augmenting the size of the labour force, but also in facilitating adjustment by helping to fill particular labour shortages as they emerge.

A second illustration of the relevance of demographic trends for the Canadian economy is the set of interrelationships between the growth of the service sector, the increasing importance of part-time work, and the increasing labour force participation of women. While there are many possible explanations for the dramatic increase in women's participation in the labour force, two hypotheses are of particular interest. First, it has been suggested that women have entered the labour force in large numbers in response to economic need, either to maintain the family's income level in a two-earner household, or to support themselves and their families in the context of lone-parent households. It is also argued that the availability of jobs in the growing service sector has provided opportunities for women to enter the labour force. These possible explanations lead, however, to more provocative questions.

To what extent, for example, has the availability of women in the labour force permitted the service sector to expand in a flexible way, particularly through part-time work arrangements, which women seem more willing, or perhaps more compelled, to accept? Furthermore, what are the economic and social implications of changing male and female roles in the economy and, in the household, with respect to activities such as child care, which were traditionally the responsibility of women who did not participate in the labour force? Finally, although it is possible that higher female labour force participation is potentially positive in terms of increasing the size and flexibility of the labour force, there is also evidence to suggest that women who work in the labour force have fewer children. If these trends continue, the growth of the population will slow even further, increasing the relative proportion of elderly people dependent on public resources – resources that are strained in an economy characterized by declining productivity. What is the trade-off, therefore, between the growing and more flexible labour force associated with higher female participation rates and the more rapidly aging population associated with declining fertility?

These illustrations point to the potential significance of emerging and future demographic trends for the economy, but also suggest a range of questions that might be explored. As a first step in this direction, the next three parts of this paper explore the state of knowledge regarding recent demographic trends in Canada.

Part Two Recent Demographic Trends at the Aggregate Level

This section briefly reviews recent demographic trends in Canada, with particular emphasis on developments in the growth of the population and the labour force over the last decade. Most of the information is derived from the papers by Denton and Spencer (1987, b), Foot (1987, b) and Seward (1987).

Over the past 30 years, the annual rate of population growth has declined steadily, from 3 per cent in 1957 at the height of the baby boom, to less than 1 per cent in 1984. The rate of population growth is determined by two factors: natural increase (births minus deaths) and net immigration (immigration minus emigration). Fertility is the most significant component of natural increase, while immigration has been the most volatile.

The most striking demographic trend in recent decades was the dramatic increase in fertility levels that began in the late 1940s and subsided in the mid-1960s. The result was the emergence of the big generation, or the baby boom generation, which includes individuals born between 1947 and 1966 with a peak in 1961. In the early 1960s, however, fertility rates began to decline very rapidly and, during the past decade, have continued to decline at a slower rate.

At the same time, there has been substantial variation in annual gross immigration flows. The postwar period saw an upsurge of immigrants. During the period of rapid economic growth in the 1950s and 1960s, an average of 130,000 immigrants entered Canada each year, with wide fluctuations reflecting economic conditions in Canada and the countries of origin, as well as the 'tap-on, tap-off' approach to Canadian policy regarding immigration levels, which based decisions on short-term labour force considerations. By 1974, gross immigration had reached almost 220,000. At that point, immigration policy became much more restrictive. This policy stance, together with recessionary conditions in the late 1970s and early 1980s, resulted in declining gross immigration from approximately 150,000 in 1976 to just over 84,000 in 1985.

The relative significance of the major demographic components of population growth over the past decade is illustrated in Table 1. During this period, the total population increased from 22.9 million in 1976 to 25.3 million in 1985. Natural increase accounted for over 76 per cent of annual population growth, while net immigration accounted for 22 per cent. Total fertility rates declined over the decade, from approximately 1.8 children per woman in 1976 to 1.69 in 1984. Net annual immigration, on the other hand, fluctuated from a low of 22,800 to a high of 97,900 during the same period. As a result, the relative contribution of natural increase and net immigration to average annual population growth varied from year to year. In 1980, natural increase accounted for 64.4 per cent and net annual immigration for 31.6 per cent of the growth of the population. In 1976, when net immigration was particularly low, the corresponding figures were 84.5 per cent and 10.1 per cent.

These demographic trends have had a major impact on the size and rate of growth of the labour force. As indicated in Table 2, between census years 1951 and 1981 the labour force increased from about 5.3 million people to approximately 11.9 million. The rate of growth of the labour force, which is determined by the rate of growth of the source

population (i.e., the population 15 years of age and older) and the participation rate, varied from a high of 3.3 per cent between 1966 and 1979 to a low of 2.1 per cent during the period 1979-1983 (see Table 3).

Moreover, as expected, the relative importance of net immigration and domestic growth of the labour force have varied over time. As illustrated in Table 3, the two forces played roughly equal roles during the period 1951-1956. By contrast, growth of the source population during the period 1973-1979 was attributable mainly to domestic sources, as the baby boom generation was absorbed into the labour force. During this latter period, participation rates were also at an all-time high, growing at an average annual rate of 1 per cent.

As shown in Table 4, however, the rapid pace of labour force growth witnessed in the 1970s changed dramatically in the 1980s. Between 1975 and 1980, the labour force grew at an average rate of 3 per cent per annum. Two-thirds of this growth was attributable to source population (domestic and net immigration) growth and one-third to increases in participation rates. It is interesting to note that while the average annual rate of growth in participation rates of the total population was 1 per cent over this period, participation by women grew by 2.6 per cent, while participation by men showed no growth at all. We return to this issue in Parts Three and Four.

The period 1980-1985 saw a decline in the rate of average annual labour force growth to 1.8 per cent, significantly lower than the 3 per cent rate during the latter half of the 1970s. This decline was due to a slowdown in the rate of growth in the source population to 1.4 per cent, mainly because of the much smaller cohorts following the baby boom generation into the labour force; an additional factor was the slower growth of participation rates, from an average of 1 per cent annually between 1975 and 1980 to 0.3 per cent during the period 1980-1985. This decline in the growth of participation rates was caused, at least in part, by the economic recession of the early 1980s. Once again, it is interesting to note that the average annual growth in participation rates for women (1.5 per cent) was significantly higher than that for men (-0.4 per cent).

Part Three The Changing Composition of the Population and the Labour Force

This section describes the major aspects of the composition of the population and the labour force that have emerged, at least in part, as a result of the demographic trends described in the previous section. First, we discuss broad changes in age, gender and regional distribution which affect the overall economy. Next, we explore several key compositional features of the labour force, focusing especially on the age, gender and ethnic composition of the labour force of particular sectors and industries. In this section, ample use will be made of the papers by Denton and Spencer (1987, a, b), Foot (1987, b), Grant and Vanderkamp (1987), Kalbach (1987), Lachapelle (1987), and Seward (1987).

As indicated in Table 5, the Canadian population has been aging gradually in recent decades. The proportion of the population under the age of 20 declined from a peak of 42.1 per cent in 1966 to 28.9 per cent by 1986. On the other hand, the proportion of the

population over 65 increased from 7.7 per cent in 1966 to 10.7 per cent in 1986. As a result, the young dependency ratio (defined here as the population under age 20 as a proportion of the population aged 20-64) declined significantly over this period from .84 to .48; at the same time, the old dependency ratio (the population aged 65 and over as a proportion of the population aged 20-64) increased slightly, from .15 to .18. Thus, the increase in the old dependency ratio was more than offset – at least numerically – by the young dependency ratio, and the total dependency ratio fell from 1.99 in 1966 to 1.65 in 1986. The implications of these dependency ratios, especially when projected into the future, will be considered later in this paper.

As shown in Table 6, the aging of the baby boom generation has had a direct impact on the age structure of the labour force in the past 10 years. By 1975, the leading majority of the big generation had entered the labour force, resulting in rapid growth of the two younger age groups (15-24 years and 25-34 years) over the period 1975-1980. By the early 1980s, however, the majority of these youth had matured into young adults, and the post-baby boom cohorts entering the labour market were much smaller. Therefore, the most rapid growth of the labour force over the period 1980-1985 was in the older groups – those aged 25-34 and, especially, 35-44.

The growth of the source population was roughly comparable for males and females. However, as indicated in Part Two, female labour force participation growth rates were much higher than the rates for men over the last decade. As shown in Table 7, this resulted in a significant shift in the relative shares of the labour force made up of men and women. Whereas in 1975 males and females accounted for 63.1 per cent and 36.9 per cent of the labour force respectively, by 1985 the figure had fallen to 57.4 per cent for men, while the proportion of the labour force made up of women had increased to 42.6 per cent. At least part of the explanation for declining participation rates for men is that because men predominated in the work force in the past, most early retirees (i.e. those who have retired before age 65, and are still of labour force age) have been men. This is likely to continue in the future because the retiring cohort is still increasing in size and is still predominantly male at the older ages. Explanations for the increase in the rate of women's participation in the labour force are more complex and will be explored in Part Four.

Over the past few decades, there have also been major regional shifts in both the population and the labour force. As shown in Table 2, there has been a gradual decline in the proportion of the total Canadian population and labour force resident in the Atlantic region, while British Columbia has seen its share of the population and the labour force rise. Since the late 1960s, the population and labour force of Quebec have been declining. The Prairie region witnessed gradual declines in both population and labour force until the late 1970s, when the trend was at least temporarily reversed. Finally, the relative proportion of the population and labour force living in Ontario has increased since 1960, with only minor reductions reflected in the 1981 census.

Changes in the size of the labour force source population by region are a function of the rate of natural increase, as well as the rate of growth of net international and internal migration. These demographic variables are also related to other variables, such as linguistic composition. By way of illustration, the population of Quebec, which has a

higher proportion of francophones than any other province, is also currently characterized by the lowest fertility rate in the country. Thus, concern about population and labour force aging is perhaps greater and more urgent in Quebec than elsewhere. Furthermore, francophones are less mobile than non-francophones and tend to be concentrated in areas where out-migration by others is high (Lachapelle 1987). The potential implications of these mobility patterns for labour market adjustment and flexibility will be explored in Part Five.

Internal migration is affected not only by linguistic considerations but by a broad range of factors, including regional labour supply and demand discrepancies, regional employment opportunities and differential wage rates. On the demand side, Grant and Vanderkamp have described a number of 'identifiable shocks' that have affected migration by altering the demand for labour in different regions at different times.

> First, we can point to changes in international prices, which are of considerable importance to Canadian regions. Changes in the world prices of oil and other internationally traded commodities have been important shocks to the fortunes of the four Western provinces, in particular in recent years. Second, changes in comparative advantage constitute important regional shocks; examples are evident in certain sectors of the mining industries and in footwear and clothing, which are regionally concentrated. Third, technological change has affected industries at different rates; most important for some decades has been the rate of technological change in agriculture, which has had a very pronounced effect on the rate of employment growth in the Prairie provinces. Fourth, resource discoveries have played a shock role in the Canadian regional system. If and when the world price of energy starts increasing again in real terms, the oil and gas discoveries on the East coast and in the Canadian North will have a profound impact on the regional rates of capital formation and employment growth.
>
> (Grant and Vanderkamp 1987, 4-5)

On the supply side, migration has also been affected by other demographic variables such as regional differences in the rate of natural increase.

The discussion so far has concentrated on broad changes in the composition of the population and labour force. There are also a number of more specific demographic variations in the labour force that are not as commonly discussed, particularly with respect to the occupational structure of the Canadian economy. As illustrated in Charts 1 and 2, three occupational groups – managerial, professional and technical; clerical; and sales and service – were extremely important by 1981, followed by the processing, machining, product fabricating, and assembling category. There was a considerable difference in the demographic profiles of these occupations by gender. While women were over-represented in the clerical category, men were dominant in the managerial, professional and technical category, as well as in the processing, machining, product fabricating and assembling category.

The occupational distribution of the labour force also differs between the immigrant and non-immigrant population. As Chart 1 indicates, a higher percentage of immigrant than non-immigrant men had managerial, professional or technical jobs in 1981: 28 per cent versus 23 per cent. Also, while 25 per cent of immigrant men were in processing, machining, product fabricating and assembling, the corresponding proportion for non-immigrant men was less than 20 per cent. Chart 2 shows that for both immigrant and non-immigrant women the major occupational group was the clerical category, but a larger proportion of immigrant women were involved in the occupational category of processing, machining, product fabricating and assembling – generally associated with low-skill, low-pay jobs.

Two conclusions of this occupational analysis are worth noting. First, the most highly skilled and most highly educated occupational group – the managerial, professional and technical group – was dominated by men in 1981. Furthermore, a relatively higher proportion of immigrant men than non-immigrant men were in this group. The importance of immigrant men in this category is perhaps not surprising, given the selection criteria for independent immigrants destined to the labour market, which stress education and skills. In fact, in 1981, a higher proportion of immigrants than non-immigrants had university degrees (Seward 1987). Second, women were over-represented in clerical and sales and service occupations.

The examination of specific occupations uncovers significant variations in age and gender, as illustrated by Denton and Spencer (1987, a, b). For example, the occupation of elementary and kindergarten teachers was dominated by women in 1981. In terms of age groups, there was a considerable concentration of teachers aged 30-39 and, to a lesser extent, aged 25-29 and 40-44, as compared to the overall Canadian labour force, as well as an under-representation of the group aged 20-24. This demographic pattern is a reflection of the rapid expansion of the elementary school system that began in the 1950s in response to the presence of the baby boom generation. The young teachers – predominantly female – who were hired at that time have aged along with the baby boom generation, and very little new hiring has occurred in recent years. If these trends continue, the median age of the occupation will increase rapidly in future years, such that the largest group of elementary teachers in 2011 could be those aged 60-64.

Another example of an occupation whose age-gender profile differs from that of the overall Canadian labour force is farming. In this case, males are dominant and tend to be over-represented in the oldest age groups and in the youngest (aged 15-19 years). In fact, the median age of farm workers was 41.3 years in 1981, compared to the overall Canadian median of under 35 years. This is largely a reflection of the rapid migration of young people from the farm sector in recent decades.

Closer examination of the labour force and particular occupational groups also reveals differences related to ethnicity (Kalbach 1987). The ethnic composition of the population and labour force has naturally been affected by immigration flows. By 1981, the foreign-born made up 16 per cent of the total population and 19.1 per cent of the labour force. Over the past two decades, the ethnic composition of the foreign-born labour force has shifted, as the dominance of Europeans has given way to immigration from Asia and other non-European sources.

There are significant variations in the labour force participation behaviour of different ethnic groups. Among immigrant women, 1981 census data indicate that those of Asian and Caribbean origin had the highest participation rates. Because of the generally high participation rates for immigrant men, there was much less variation, but immigrants of European origin had higher rates than those of Asian and Caribbean origin. Also, there appears to be some evidence of occupational segregation by ethnic groups, but the explanation for, and implications of, such segregation differ from case to case.

> While inequality of opportunity often results in the concentration of certain minority immigrant groups in low-paying jobs (e.g., West Indian women in domestic jobs), this is not always the case (Reitz 1980). Italian males also show high levels of concentration, but in this case it is in occupations in the construction industry where they have greater control of the distribution of jobs and access to much higher wage scales. In the case of West Indian women, who generally have high school education, it would appear to be race prejudice that is primarily responsible for their concentration in low-paying jobs with minimal opportunities for social mobility. For Italian males, it is their generally low educational attainment levels that places them at a disadvantage in competition for jobs outside those occupational sectors where they have established control.
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> (Kalbach 1987, 6)

In summary, there have been broad, overall changes in the composition of the population and the labour force as the population has aged and as a result of migration flows and the increasing participation of women in the labour force. Underlying these trends, there is considerable heterogeneity in the occupational structure of the labour force. In Parts Five and Six, we explore the implications of these trends and variations for the Canadian economy. Before doing so, however, we reflect on a particularly interesting behavioural aspect of demographic change, examining explanations for the increase in the labour force participation of women in recent years.

Part Four The Behavioural Aspects of Demographic Change: Female Labour Force Participation

One of the most striking demographic trends in recent decades has been the dramatic increase in women's labour force participation. The purpose of this section, which is based on the papers by Townson (1987) and Vlassoff (1987), is to explore possible explanations for this trend.

As indicated in Table 8, the labour force participation rate of women aged 25 and older has increased rapidly in the past 20 years, while that of men has been declining gradually. Whereas in 1967 only about 32 per cent of women 25 and older were in the labour force, their participation rate had increased to over 52 per cent by 1986. At the same time, the participation rate of men 25 and older declined from 84.5 per cent to 78.2 per cent.

The greatest change has been in the participation rate of married women of childbearing age (assumed to be ages 20-44), which increased from 29.3 per cent in 1966, when the fertility rate was almost three children per woman, to 70.4 per cent in 1986, when the fertility rate was less than 1.7 (Townson 1987). The 1970s also witnessed the decline in the proportion of households with one earner only (generally the male), from 32 per cent of all families in 1971 to 16 per cent in 1981. At the same time, two-earner families as a proportion of all families increased from 36 per cent in 1971 to 49 per cent in 1981. The latter was by far the most common type of household by 1981 (see Table 9).

What has accounted for this significant and largely unanticipated extent of increase in women's labour force participation? A considerable body of research has pointed to a number of determinants. From a supply perspective, these include women's higher educational levels, declining fertility, increases in divorce rates, changing social values inherent in the women's movement, and economic need. In terms of demand, the availability of paid employment, particularly in the rapidly growing service sector, may have drawn women into the labour force, particularly since the mid-1970s.

There is clear historical evidence of a strong correlation between declining fertility rates and increased female labour force participation. In recent years, however, the relationship between fertility and labour force participation has become blurred. As we have seen, the most rapid growth in participation rates has been experienced by married women of childbearing age. Also, there is evidence to suggest that there is a difference in the work and childbearing patterns of women of different generations. The generation of women now aged 45-54 generally followed the traditional pattern of interrupting their paid employment, often for long periods of time, for child-rearing. There is recent evidence to suggest, however, that younger women are less inclined to interrupt their labour force activity for child-rearing, and when they do so, it is for shorter periods of time (Townson 1987). This generational difference may be due, at least in part, to influences such as higher educational levels, economic need, and changing societal and personal attitudes and expectations, as well as to generally lower levels of fertility.

These inter-generational differences make somewhat ambiguous the causal relationship between fertility and female labour force participation. Does fertility depress women's participation in the labour force or vice versa? Reporting on recent Canadian research, Vlassoff summarizes the complexities of the relationship as follows:

> Thus, there seems to be a circular causal chain linking fertility to labour force participation and back to fertility. In support of this, Cramer (1980) maintains that the causal direction is from fertility to labour force participation in the short run, and from the latter to the former in the long run. In the early years of marriage, a woman's desired family size tends to determine her labour force status; in the longer term, however, her desire to enter and remain in the work force largely influences her family-size decisions. Further research in the Canadian setting is, however, required before any definitive conclusions can be drawn concerning these important interrelationships.
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> (Vlassoff 1987, 5)

While it is not the purpose of this paper to review the literature on all the correlates of women's labour force participation, it is useful to reflect on two other possible forces besides the fertility-participation relationship. Specifically, as suggested in Part One of this paper, deteriorating standards of living and economic need, as well as the expansion of the service sector, have probably encouraged more women to engage in paid work.

Economic need appears to have a major influence on women's labour force participation. As shown in Table 9, the number of lone-parent households has increased steadily over the past two decades. Since most of these are headed by women, an increasing number of women are now the sole support of their families. (The number of lone-parent families is related, of course, to higher rates of divorce and separation. An interesting question is whether these higher rates of family breakdown are related in turn to economic opportunities, and therefore greater economic independence, for women.) But even in two-parent households, two incomes are often deemed necessary to support the family. In households with children under six where the wife did not work outside the home, the average total income was approximately $29,000 in 1984. By contrast, families with children in the same age category in which both the husband and wife were in the labour force in 1984 had an average income of almost $41,000 (see Table 10). It is worth noting, of course, that at least part of the difference in income may have to be used to pay for child care in two-earner families.

Perhaps most interesting from an economic perspective is the hypothesis that the availability of work in the service sector has attracted women to the labour force in increasing numbers. Table 11 summarizes the growth of employment between 1975 and 1985, disaggregated by industry and gender. During this period, the vast majority of jobs created were in the tertiary or service sector; within this sector, the most rapidly growing industry was community, business and personal service. These areas of greatest employment growth were also those where the majority of women found employment. While there was a total increase of approximately 2 million jobs in the service sector between 1976 and 1986, over 1.3 million, or approximately two-thirds, of these new jobs were filled by women (calculations based on Table 11).

Over the past decade, part-time work has expanded more rapidly than full-time work, and women accounted for 72 per cent of all part-time workers in 1985. Furthermore, 80 per cent of all women who had part-time jobs in 1986 worked in two categories within the service sector: trade and community, business and personal service (Townson 1987).

Thus, the most rapidly growing type of work (part-time) in the most rapidly growing parts of the economy has also been the source of employment growth for women. Whether the availability of such jobs attracted women to the labour force, or whether the service sector, which relies to a significant extent on part-time employment, was able to expand because of the availability of more women in the labour force, remains an unanswered question. It may well be that both trends have reinforced each other.

It is important to recognize, however, that there may be negative aspects of these patterns of female labour force participation. It is sometimes suggested that women are concentrated heavily in the service sector because they face barriers to their entry to other sectors of the economy. Furthermore, there is evidence to suggest that an

increasing proportion of women who work part-time do so involuntarily because they are unable to secure full-time employment (Townson 1987).

In summary, the explanations for the increase in female labour force participation have become more complex as the causal relationship between fertility and participation has become less clear, and as economic and attitudinal forces appear to have become more significant. Moreover, the presence of women in the labour force is related closely to the growth of the service sector, the major generator of employment in the Canadian economy. The implications of these trends for the economy, and for particular social services, will be explored in Part Six.

Part Five Projections of the Future Population and Labour Force

In previous parts of this overview, we discussed recent demographic trends and the present composition of the population and labour force. What do these tell us, however, about likely developments in the future? A wide range of projections of the future population and labour force have been developed by federal government departments, especially Statistics Canada, and by individual researchers and academics. For example, in their studies for IRPP, Denton and Spencer (1987, a, b) prepared projections using several scenarios or different sets of assumptions regarding future fertility, mortality and net immigration levels. For purposes of illustration, reference will be made in this overview to the projection incorporating 'medium' assumptions (see Denton and Spencer (1987, a)). In this projection, the total fertility rate remains at the level of 1.7 throughout the projection period; net immigration is 50,000 per year; and mortality rates continue to decline (for most age-sex groups) until the year 2031, but at a decelerating rate.

As indicated in Tables 12 and 13, the demographic trends projected over the coming decades will follow the patterns established in the 1970s and 1980s. The overall rate of population and labour force growth will decline steadily; the proportion of the population under the age of 20 will fall; and the proportion age 65 and over will rise, from an estimated 10.7 per cent in 1986 to 13.4 per cent in 2001 and 25.1 per cent by 2036.

What are the implications of these trends for population-based dependency ratios? As seen in Table 12, the old dependency ratio (defined as in Part Three above) continues to rise over the entire projection period, while the young dependency ratio falls, at least until 2016. The total dependency ratio falls until 2011, after which it rises. But even at its peak in 2036, the total dependency ratio of 1.83 is lower than the level of almost 2.00 that prevailed in the 1960s (recall Table 5).

Using the same medium assumptions projection, and assuming that labour force participation rates follow the trends of recent decades (i.e., female rates are assumed to continue to rise and the rates for older males to decline), Table 13 summarizes future labour force trends to the year 2036. The decline in the rate of growth of the labour force that began in the 1980s is projected to continue for several decades and actually becomes negative in 2016. The total dependency ratio (defined here as the ratio of the total population to the labour force) declines from 1.98 to 1.89 between 1986 and 2001, after which it begins to rise.

Clearly, these projections based on medium assumptions represent only one possible scenario for the future. Denton and Spencer (1987, a, b) explored other possible sets of assumptions, but with the possible exception of the 'high fertility' projection (in which the total fertility rate is assumed to rise in equal annual increments from 1 7 births per woman to 3 0 by 1996, remaining at that level thereafter), the general population and labour force patterns are broadly similar to those described for the medium assumptions projection. While it is difficult to have confidence in projections over several decades into the future, shorter time frames permit more realistic scenarios. At least until the end of the century, it is likely that the population and labour force will age gradually, the rate of growth of the population and the labour force will decline (although both will remain positive), and whereas the total population and labour force dependency ratios will decline, the population dependency ratios will increase for the elderly population and decrease for the young.

What are the major possibilities for error in these estimates to the end of the century? First, much higher fertility rates could have an impact on the rate of population growth and aging and on dependency ratios (as shown in Denton and Spencer's high-fertility projection), but they would not directly affect the labour force source population, because there is a time lag between birth and labour market entrance. However, if higher fertility led to declines in female labour force participation, it would indirectly affect the size of the labour market.

Second, participation rates of men, women and youth might differ from the assumptions in the medium projection. For example, female participation rates may increase at a more rapid rate or at a slower rate than was evident in the past decade. Similarly, discouraged youth who had dropped out of the labour force might re-enter if economic conditions improved.

Third, much higher or lower levels of gross immigration would have a direct impact on the labour force, both by changing the size of the source population and because immigrants tend to have higher labour force participation rates than non-immigrants (Seward 1987). In fact, this author would argue that the high-immigration projection used by Denton and Spencer (which assumes gross immigration of 150,000 per annum and net immigration of 100,000) is perhaps too low, given historical levels of gross immigration and the federal government's current policy of increasing immigration levels gradually; levels have been set at 115,000 to 125,000 for 1987 and may increase even further after 1987 (Seward 1987). In any event, this analysis shows immigration levels are a key policy variable to use in influencing demographic factors. Finally, different levels of emigration from Canada would alter the size and nature of the labour force, and have potential relevance for the supply of particular skills.

Thus, despite the compelling logic of the medium assumptions projections, there may be surprises, even in the short period remaining before the end of the century. While there can be relative certainty about some demographic trends, such as the number of people who will reach 65 by the end of the century (unless, of course, there is a significant increase in the immigration of older people), there is considerable uncertainty regarding other trends.

Notwithstanding these limitations, available demographic projections are useful in providing a starting point for exploring the possible implications of demographic change for the Canadian economy in the future, at least until the end of the century. In the next part of this paper, we discuss a number of these implications.

Part Six The Implications of Demographic Change for the Canadian Economy: The Late 1980s and the 1990s

In order to explore the possible implications of demographic change for the Canadian economy in the future, it is useful to examine the nature of demographic-economic interrelationships, as conceptualized in Figure 1. The relationships discussed below are meant to be illustrative and by no means include all possible interconnections.

Demographic variables have an influence on both the supply and the demand sides of the economy. From a supply perspective, the rate of growth and structure of the population have direct effects on the size, rate of growth and composition of the labour force. The labour force, in turn, along with capital and technology, is a key element in the overall productive capacity of the economy. Demographic variables also affect several aspects of demand, including government expenditures, private consumption and saving, public and private investment, and exports and imports. These, in turn, affect the derived demand for labour. A key example is the impact of the baby boom generation on government expenditures on education in the 1950s and 1960s.

The relationship between demographic and economic variables is not, of course, uni-directional. For example, as suggested in Part Four, the emergence of the service sector may have been an important factor in increasing the labour force participation of women over the past decade. As well, structural change at the regional level has undoubtedly stimulated internal migration flows.

Finally, public and private policy initiatives affect, and are affected by, economic and demographic variables. For example, immigration policy in recent decades has affected immigration levels, which have had an impact on the size and composition of the labour force. To a great extent, however, immigration policy has been formulated on the basis of economic conditions, particularly labour market needs.

Given the significance of demographic-economic interrelations, what are the implications of recent and projected demographic trends described in this overview for the Canadian economy in the late 1980s and the 1990s? In particular, to what extent will these demographic trends impede or assist the process of economic adjustment necessitated by the major domestic and international changes outlined in Part One? From the supply perspective, will the labour force, which is now growing much more slowly, be flexible enough to adapt to economic change? Will adjustment be more costly and difficult than would have been the case with the younger and more rapidly growing labour force that characterized the 1960s and 1970s? What variations in adjustment prospects are likely to exist across different occupations? What are the implications of the increasing labour force participation of women for the flexibility of labour markets? And what role can internal and international migration play in the adjustment process?

Moving from the level of the overall labour market to the individual level, what are the implications of demographic change for employees in terms of their personal mobility, promotion prospects and job satisfaction?

On the demand side, in what ways is the aging of the population likely to affect private consumption patterns and public expenditure? What do increasing old dependency ratios imply for government spending on programs such as health and pensions? Is it a simple matter of transferring resources from the young to the old?

Finally, what is the interface between supply and demand; in particular, what pressures will be put on public resources to assist in the adaptation of the labour force through the provision of training and mobility assistance? And how might the presence of more women in the labour force influence the demand for public expenditure on services such as child care? We endeavour at least to begin to explore these questions below.

(a) The Supply Side: Labour Market Flexibility, Adaptability and Productivity

A labour force that is growing more slowly will mean fewer young labour market entrants in the late 1980s and the 1990s. In 1980, there were over 3 million youth in the Canadian labour market, representing more than one-quarter of the labour force. By 1985, their share had dropped to 22.6 per cent. By the end of the century, given current participation rates, their share might fall to 17 per cent (Foot 1987, b). This decline in the relative number of young labour market entrants could lead to a labour force that is less flexible and mobile from a geographical, occupational and industrial perspective.

> These persons are presumed to be the most flexible with respect to location and occupation. They possess up-to-date labour market skills, and do not have a work history tying them to any particular organization or occupation. Moreover, they are not already part of an organization's bureaucracy and hence represent resources which can be deployed in the most efficient manner without disruptive costs to both employer and employee. At the margin they are by far the most adaptable resource available to an organization and their deployment facilitates growth in an ever-changing marketplace.
>
> (Foot 1987, b, 8-9)

To a certain extent, however, the smaller number of new labour market entrants could be offset, at least until the end of the century, by expected gains to be reaped from the presence in the labour force of the large, gradually aging and relatively well-educated baby boom generation, whose members are now in their twenties and thirties. Major investments were made in the education of these cohorts, and one would logically expect a pay-off from such an investment, particularly as workers gain on-the-job experience. Thus, "age-related productivity gains may act as an offset to the reduction in numbers associated with slower labour force growth" (Denton and Spencer (1987, b, 10)).

Four caveats should be noted in discussing the potential productivity gains associated with the presence of the baby boom generation in the labour force. First, the education obtained by the current labour force in the 1950s and 1960s may well be

inappropriate in the late 1980s and 1990s, particularly given the changing economic environment and technological change. Furthermore, the returns to such investments already appear lower than originally expected, as the supply of individuals with higher education has grown. Second, as will be discussed below, training and retraining, in order to update skills and facilitate adjustment, are of critical importance. Third, the expected productivity gains associated with on-the-job experience may not be fully realized, given the high youth and young adult unemployment rates that have characterized the past decade and still prevail. There is little understanding of the potential long-term effects of youth unemployment on overall labour market productivity and personal labour market potential. Finally, the aging process may make the baby boom labour force less mobile – from both an occupational and a geographic perspective – thereby impeding the adjustment process.

In considering the flexibility and productivity of the labour force, it is important to recognize that there are major differences in the age, gender and ethnic profiles of particular occupations in the economy. With respect to age, it is assumed that the age structure of the labour force in a given occupation is important for two reasons:

> First, it bears on the mobility and adaptability of the workers, and on the recency of their training. A work force that is relatively young may be more adaptive and creative, and more familiar with newer techniques of production. Young workers are better able to find new jobs when their industry or occupation falls on hard times and employment is reduced. Second, though, distribution by number of years to retirement also bears on the speed with which employment in a given industry or occupation can be reduced without serious hardship. An older work force may be less adaptive and mobile but it will also have a higher rate of retirement; the work force may therefore be able to contract more rapidly as a result of natural attrition.
>
> (Denton and Spencer 1987, a, 18-19)

As observed in Part Three, a number of occupations with older demographic profiles – such as elementary teachers and farming – are also occupations that are already facing the need to adjust. In the case of the elementary teaching profession, smaller cohorts of young children will diminish the need for teachers. While some will retire, a large number of older women who have spent most of their working lives in one profession may be displaced. Similarly, the agricultural industry is already under pressure as the small family farms that employ many older workers can no longer remain viable. To what extent will these older workers, whose training may be dated and restricted to one occupation, be able to adapt successfully and find new employment? Also, how will the quality of education be affected by a teaching labour force whose skills might be outdated?

The demographic profiles of occupations also vary with respect to gender. The vast majority of women are employed in the service sector, for example, the most rapidly growing sector of the economy. As hypothesized earlier, it is possible that the expansion of the service sector has been facilitated by the availability of women in the work force. The growing importance of women in the labour force, however, is already creating greater pressure to provide adequate and affordable child care, as well as for the

accelerated introduction of labour market policies such as affirmative action and equal pay legislation. With respect to child care, it should be noted that although there are significant costs involved in providing adequate assistance, the expansion of child care services will also generate employment, particularly for women.

Finally, as we have seen, there is considerable variation in the ethnic composition of different occupations. Very little is known about the implications of these variations for the flexibility and productivity of the labour force. However, to the extent that many ethnic groups are caught in enclave occupations, their mobility prospects may be limited.

Given the extent to which demographic change complicates the adjustments in the overall economy and particular occupations, what role can internal migration and immigration play in facilitating adjustment? As discussed in an earlier part of this paper, internal migration has responded historically to regional and industrial imbalances resulting from technological change, new trading patterns, changes in the prices of commodities, and so on. However, the adequacy of this response is understood relatively poorly, particularly in terms of the contribution internal migration makes to filling particular labour shortages. Looking to the future, it is difficult to predict whether internal migration will remain at levels experienced historically, particularly as the overall labour force ages and, presumably, becomes less mobile. Also, particular groups of the population – such as francophones – have tended to be less mobile than other groups. This may impede adjustment in predominantly francophone regions and provinces, especially if such regions are also faced with the prospect of key industries in decline. An important example may be the adjustment difficulties posed by the changing textile industry in Quebec.

The potential advantages associated with immigration as a means of facilitating adjustment may assume significant importance in the future. In the past, immigration flows have made an important contribution to the overall size and rate of growth of the labour force, not only by increasing the size of the labour force source population, but also because labour force participation rates are higher for immigrants than for non-immigrants. Furthermore, immigration has had a positive effect on the structure of the labour force in two ways. First, largely as a result of selection criteria introduced in the late 1960s and reinforced since then, immigrants tend to be better educated and more highly skilled than non-immigrants. Second, and related to this, immigrants are often over-represented in occupations that require high skill levels and that have been characterized historically by labour shortages (Seward 1987).

What are the implications of these immigration trends for the economy in the future? First, the role of immigration in increasing the rate of growth of the labour force assumes special importance in the late 1980s and the 1990s, when the rate of growth will be slowing. Second, because many immigrants are more highly trained and educated than non-immigrants, their occupational mobility may be higher. Third, immigrants may be able to fill specific labour shortages as they emerge, particularly in the short run while the domestic labour force is being trained and in the normal time-lag before internal migration responds to regional labour supply and demand discrepancies. Thus, immigration has potentially important short-term and long-term implications for the economy.

So far, we have discussed the implications of demographic change in terms of the overall marketplace and with respect to variations across occupations. However, it is also important to examine the implications of these labour force trends, particularly the age structure of the labour force, for individual employees in terms of their personal mobility, promotion prospects and job satisfaction.

The promotion and mobility prospects of individuals may be affected negatively by prospective changes in the age distribution of the labour force:

> The basic idea, as suggested by Keyfitz (1973), is that one's promotion prospects are influenced by age distribution: if organizations (and the labour force as a whole) tend to be structured in such a way that advancement is strongly associated with age (or experience), and the ratio of workers of a given rank to others above and below them is fixed, then the typical age at which a given rank is attained will vary inversely with relative cohort size. Hence one might anticipate that those now in their late 20s or early 30s, who were born during the baby boom period, would experience relatively slow rates of advancement, and that their attainment of senior rank would come rather late in their working lives.
>
> (Denton and Spencer 1987, b, 11)

Referring to their own previous work, Denton and Spencer (1987, b) report the findings of a preliminary investigation of this phenomenon and conclude that the age of reaching middle rank is already increasing and is expected to continue to increase by several years by the end of the century; in the case of senior rank, the age will begin to increase after 1991. Thus, as the large baby boom generation ages, its promotion prospects will be delayed as it "clogs up" the labour force.

More limited personal promotion prospects may lead to increased discontent in the labour force in the years ahead. "This discontent may make redeployment of existing resources more difficult, or it could facilitate such redeployment as employees move in an attempt to seek promotional prospects" (Foot 1987, b, 9). To a certain extent, organizations and management styles may have to adapt in order to provide job satisfaction when upward mobility is more limited. For example, more organizations may encourage early retirement in order to facilitate the upward mobility of younger employees.

In summary, the effects of demographic change on labour market flexibility and adaptability are likely to be mixed in the late 1980s and the 1990s. The slower rate of growth of the labour force may be offset by the potential productivity gains associated with the presence of the aging baby boom generation. The adjustment process may be facilitated by the presence of women in the labour force and by internal and international migration. However, what is clear is that the costs of adjustment may be significant, particularly in terms of labour market policies such as training, mobility assistance and equal pay legislation, as well as social services such as child care. These costs, which will be borne—at least in part—by the public sector, will put pressure on government expenditures. Furthermore, the ease and cost of labour market adjustment will vary significantly across occupations. Finally, effects will be felt not only at the labour market

level but also at the individual level, as members of the labour force find their personal mobility prospects altered.

(b) *The Demand Side: Aggregate Demand, Changing Consumption Patterns and Dependency Burdens*

Demographic variables affect demand in a number of ways. First, the overall size and rate of growth of the population affects aggregate demand along several dimensions, including private consumption levels, government expenditures, and investment. Second, the changing composition of the population can affect consumption patterns for public and private goods and services and alters the dependency burden borne by the productive population of labour force age.

It is possible that a decline in the rate of population growth might have a depressing effect on overall aggregate demand. What is not clear, however, is what effect this would have on measures of economic growth such as per capita income. For example, several empirical studies have used Canadian macroeconomic models to assess the economic impact of increases or decreases in population size as affected by different levels of immigration flows (reported on by Bodkin and Marwah (1987), and Seward (1987)). Although the studies vary in methodology and results and suffer from various gaps, the overall conclusion of the majority of the studies is that while higher levels of immigration (and therefore larger populations) increase demand at the aggregate level in terms of investment and real gross expenditure, they cause measures of intensive growth, including real income per capita and real wages, to decline. It is worth pointing out, however, that the latter effects are small and could probably be offset by fiscal or monetary measures.

Thus, the likely economic effects of a declining rate of population growth in the 1980s and the 1990s are not entirely clear. Furthermore, while the rate of growth of the population will decline, it will remain positive until at least the end of the century. It is unlikely, therefore, that this aspect of demographic change will make much difference in the medium term.

Perhaps more important is the changing composition of the population and its impact on private and public consumption patterns. We will begin by exploring the economic impact of the changing population age structure. The population will continue to age to the end of the century, with a decreasing proportion of children and youth and an increasing proportion of elderly people. This is likely to change private consumption patterns, thereby differentially affecting demand in various sectors of the economy.

> Age dominates, to a considerable extent, the kinds of goods and services people require and, hence, the kinds of industries and services that are developed in response to these needs. In other words, the age structure of the population influences the ***kinds and quantities of goods and services demanded***. A large proportion of young people, for instance, will lead to the development of industries geared towards youthful needs and tastes. The rapid expansion of the music and games industries

> in Canada over the past few years is a function of the large market of teenagers and young adults. Similarly, as the big generation ages, its sheer size likely will continue to motivate marketing people to produce appropriate products and services specifically tailored to its needs.
>
> (Vlassoff 1987, 3)

While it is intuitively logical to expect these changes in private consumption patterns, age-distribution effects have been difficult to detect empirically using econometric demand studies:

> Effects on aggregate consumption-saving patterns are hard to detect, and so too are effects on broad categories within the aggregates. It seems likely that one of the reasons for lack of clarity in consumption-category effects is the breadth of the categories for which statistical data are available; it may well be – and some studies have suggested this – that one has to work with quite narrowly defined categories in order to get close to age-distributional effects.
>
> (Denton and Spencer 1987, a, 15)

This suggests that our understanding of age-distributional effects on private consumption is limited and that the research required to shed light on these issues presents difficult challenges.

Much better understood is the likely impact of the changing age-distribution of the population on public expenditures. A number of studies (including several by Denton and Spencer, and Foot, not reported here) have projected the likely effect on overall government expenditures of the declining demand for services, such as education for the decreasing youth population, and the accelerating demand for other services, such as health care and income transfers in the form of pensions for the increasing number of elderly people. The scope of this overview does not permit a full discussion of the results of these studies. It is worth noting, however, that the researchers have concluded that the overall cost to the public sector appears manageable, at least until the turn of the century, but the federal level of government will bear a disproportionate share of the costs. This is because the most burdensome items – income transfers to the elderly – are primarily the responsibility of the federal level of government. The implications of these trends for federal deficits are only beginning to be explored (Foot 1987, a).

Analyses of the impact of the changing age-structure of the population are frequently couched in discussions of dependency ratios. As discussed above, the total population and labour force dependency ratios are likely to decline by the end of the century, with the increasing elderly dependency ratios being more than offset – at least in a numerical sense – by the decreasing youth dependency ratio. Since the taxable base of the population will remain large as a result of the presence of the baby boom generation in the labour force, it would appear that the overall dependency ratio, at least to the end of the century, will not be onerous and in fact will be lower than levels experienced in Canada in earlier decades.

At a superficial level, this conclusion appears reassuring. However, as Foot (1987, a) has pointed out, this traditional approach to assessing dependency ratios makes a number of assumptions that may have to be questioned: first, that on a per capita basis, expenditures on the young are the same as those on the elderly; second, that all members of the working age population are gainfully employed and do not depend on public resources; and third, that resources can be transferred readily from the young to the elderly.

With respect to the first assumption, Foot estimates (on the basis of his own previous research) that per capita government expenditures on the elderly are roughly two-and-a-half times greater than those on the young. Thus, "a rising elderly ratio even if exactly offset by a declining youth ratio, would result in an *increase* in government spending . . ." (Foot 1987, a, 6).

The second assumption is that all members of the labour force source population are gainfully employed. However, in 1985, less than two-thirds of the male and female source population participated in the labour force (recall Table 4). Furthermore, even for those in the labour force, unemployment rates are high and may remain high in the future. Thus, labour force participation rates and unemployment affect the size of the productive and taxable population base. Also, unemployment is associated with government expenditures on income support programs such as unemployment insurance and welfare. Moreover, in a changing economic environment characterized by adjustment challenges, public programs such as training and mobility assistance for displaced workers will also drain public resources. Thus, youth and the elderly are not the only members of society who may pose a dependency burden.

Finally, the third assumption is that resources can be transferred readily from youth to the elderly population. Thus, for example, the resources spent on education for the young can be redirected to pensions or health care for the elderly. However, as we have already seen, there will be adjustment costs associated with the dislocation of workers in the teaching occupation, and the existing education infrastructure (buildings, equipment, supplies and so on) may not be readily transferrable to other uses. Furthermore, different levels of government are responsible for different types of public expenditures. Transferring resources from youth to the elderly may therefore imply the renegotiation of federal-provincial cost-sharing arrangements—and by no means would this be a straightforward task.

As we have seen, the effects on the economy of the changing age-composition of the population are likely to be complex. These are further complicated by other aspects of population composition. For example, recent research has demonstrated that there are differences in the consumption and saving patterns of immigrants and non-immigrants in Canada. It has been suggested that two factors explain these differences: the transition effect and the cultural differential.

> The transition effect refers to modifications to usual consumption or saving behaviour caused by the transfer of a household from one country to another country. For example, immigrants may transfer their assets to Canada as cash, and they often must acquire household goods such as furniture and

> appliances. While these are being purchased, other purchases will be a smaller proportion of total expenditure. This transition effect is caused directly by migration. The second reason relates to the foreign-borns' differing cultural backgrounds that influence their spending habits at least during their initial years in Canada.
>
> (Marr 1987, 2-3)

Reporting on his own previous research using expenditure and income survey data for 1982, Marr (1987) concludes that immigrants allocate a significantly higher proportion of their income to food and shelter and less to clothing. Furthermore, the more recent the time of immigration, the higher the proportion of income devoted to expenditures on food, shelter, household items, clothing and transport. Thus, immigrants would appear to stimulate demand in different ways than non-immigrants. Given the current government policy of increasing immigration levels gradually over the next few years, and assuming that immigration flows actually do increase, the different spending patterns of immigrants may have a modest impact on particular sectors of the economy in the years ahead.

In summary, various demographic trends are likely to affect the demand and supply sides of the economy in the future. On the demand side, the aging of the population is likely to alter the overall level of government expenditures, the allocation of resources among different categories of expenditure, and the proportion of spending by different levels of government. Furthermore, the changing composition of the population is likely to affect private consumption in various ways. These forces will put continuing pressure on the economy to adjust. From the supply perspective, the adjustment process will be influenced to a great extent by the capacity of a labour force that is aging and growing more slowly to adapt and change. Thus, demographic forces both contribute to the need for adjustment and determine, at least in part, the economy's capacity to adapt.

Part Seven Conclusions and Implications for Further Research

In this paper, we have endeavoured to describe major recent and projected demographic trends and assess their potential implications for the Canadian economy in the late 1980s and the 1990s. The analysis has been set in the context of a rapidly changing economy that faces major challenges of adjustment and adaptation.

We have found that there is a good understanding of historical demographic trends. The relative impact of demographic forces on the overall size and rate of growth of the population and labour force has been well documented in the literature. As well, reasonably good tools exist for projecting such trends into the future. Furthermore, important work has already been done on some of the implications of these trends for the macro-economy, particularly in terms of the likely costs of changing age structure and associated dependency ratios.

Underlying this general understanding, however, are a number of uncertainties and critical gaps in knowledge. What is the relationship between employment, unemployment and the labour force participation of different demographic groups? What

adjustment problems are likely to be faced in different regions and sectors of the economy? How is the nature of work changing, and what are the implications of higher levels of female labour force participation? What is the significance of the changing nature of the family? And finally, what role do population movements – immigration, emigration and internal migration – play in an economy faced with the need for continual adjustment and adaptation?

These questions and gaps in our understanding of the relationship between demographic and socio-economic trends suggests the need for research in the following areas:

1. *Employment, Unemployment and Labour Force Participation*

   Sectoral and regional shifts in employment and unemployment are closely related to technological change, new trading patterns, changes in international prices, and so on. What is the relationship between these shifts and the participation rates of different demographic groups – men, women, youth and immigrants of different ethnic backgrounds? In the case of women, what is the nature of the relationship between the expansion of the service sector and the dramatic increase in female labour force participation?

2. *The Capacity to Adjust*

   Will a labour force that is aging and growing more slowly be able to adapt and adjust in the context of an increasingly competitive international economy? Which industries and occupations are likely to face the most serious adjustment consequences in coming years, and to what extent will inter-occupational and geographic mobility be affected by the demographic profiles of the labour forces of these industries and occupations? Finally, what are the implications of these adjustment needs for public policy in the areas of education, training and mobility assistance?

3. *The Changing Nature of Work*

   What are the economic and social implications of the increasing importance of part-time work, especially in the service sector? How are individuals and organizations adapting to the 'clogging-up' of promotion prospects for the work force associated with the aging of the baby boom generation? To what extent will the presence of more women in the labour force modify management and decision-making structures within organizations? Are new concepts such as work sharing useful mechanisms for dealing with unemployment?

4. *Equality in the Economy*

The growing significance of women in the labour force is putting pressure on the public and private sectors to accelerate the implementation of affirmative action and equal pay legislation, as well as to provide more substantial assistance for adequate child care. What are the costs and benefits associated with these measures, particularly in terms of the economy's capacity to adjust?

5. *The Changing Family*

Households are becoming smaller, and the roles of men and women are changing rapidly. The most common type of household is now a two-earner family with fewer than 1.7 children. Moreover, the significance of lone-parent households (generally headed by women) continues to increase. What are the implications of these changes for the organization of paid and domestic work and for the provision of social services such as child care? Is the relationship between fertility levels and female labour force participation changing, as reflected in the different work patterns of different generations of women?

6. *The Economic and Social Impact of Immigration*

Immigration has significant economic implications for both the supply and the demand side of the economy. From a supply perspective, what role do immigrants play in particular labour markets and regions? To what extent do immigrants facilitate adjustment and economic growth by increasing the rate of growth of the labour force, by filling labour shortages and by providing new labour market entrants? From the demand side, what role do business and other immigrants play in the direct creation of jobs? More indirectly, how do the saving and consumption patterns of immigrants differ from those of non-immigrants, and what are the implications of these differences for the economy? The social impact of immigration is most evident in the increasingly diverse cultural and ethnic make-up of society. How are Canadian institutions adapting to the presence of larger numbers of immigrants, particularly from Third World countries?

7. *The Nature and Economic Impact of Emigration*

Immigration and emigration are a reflection of international variations in economic, social and political conditions. In the case of emigration, there is inadequate understanding of its effects on regional and sectoral labour markets, as well as on particular occupations and skills. What is the nature of Canadian emigration flows, particularly to the United States? And what proportion of emigrants were previously immigrants to Canada?

8. *The Role of Internal Migration in Facilitating Adjustment*

To a certain extent, internal migration has responded to regional labour supply and demand discrepancies. What impact does migration have on the sending and receiving communities? What is the relationship between internal migration and immigration in facilitating adjustment? To what extent have social programs such as unemployment insurance influenced migration patterns?

It is recognized that in some of these areas (e.g., labour market adjustment), a considerable body of research already exists, and any Institute involvement would be limited to filling identified gaps. In areas where the available research is more limited, such as the economic and social impact of immigration and emigration, the Institute has already launched a much more comprehensive research program.

Figure 1: Major Relationships Between Demographic and Economic Variables

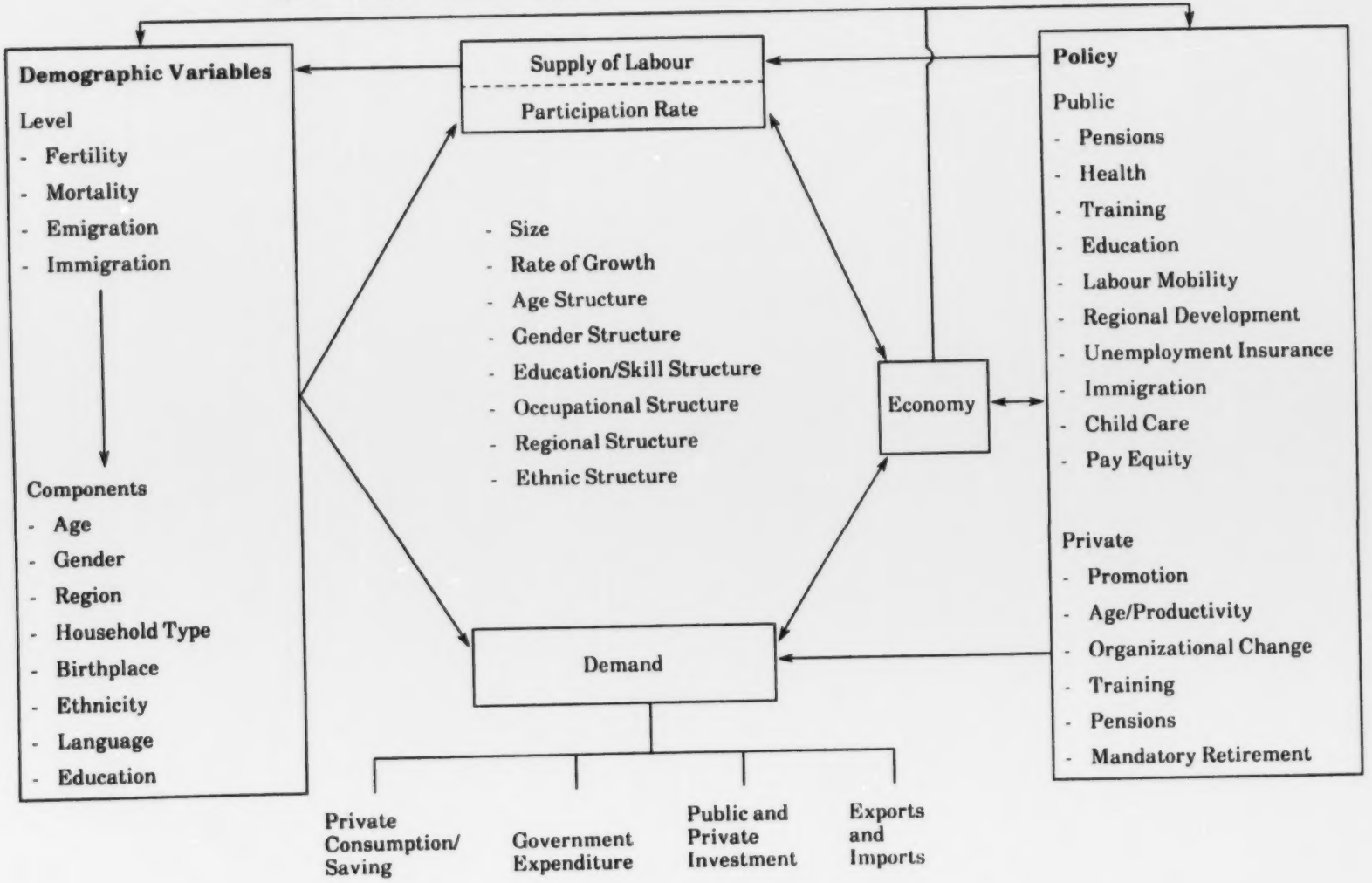
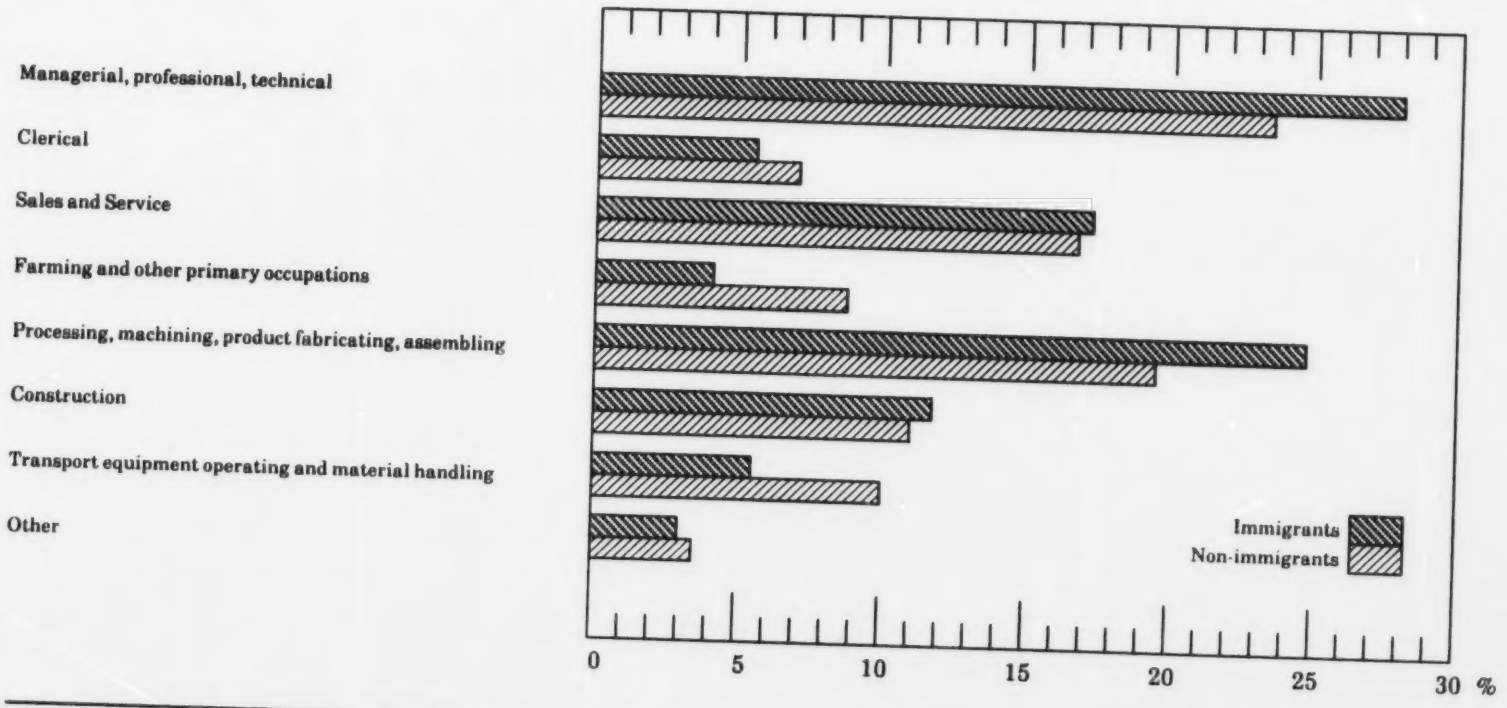


Chart 1

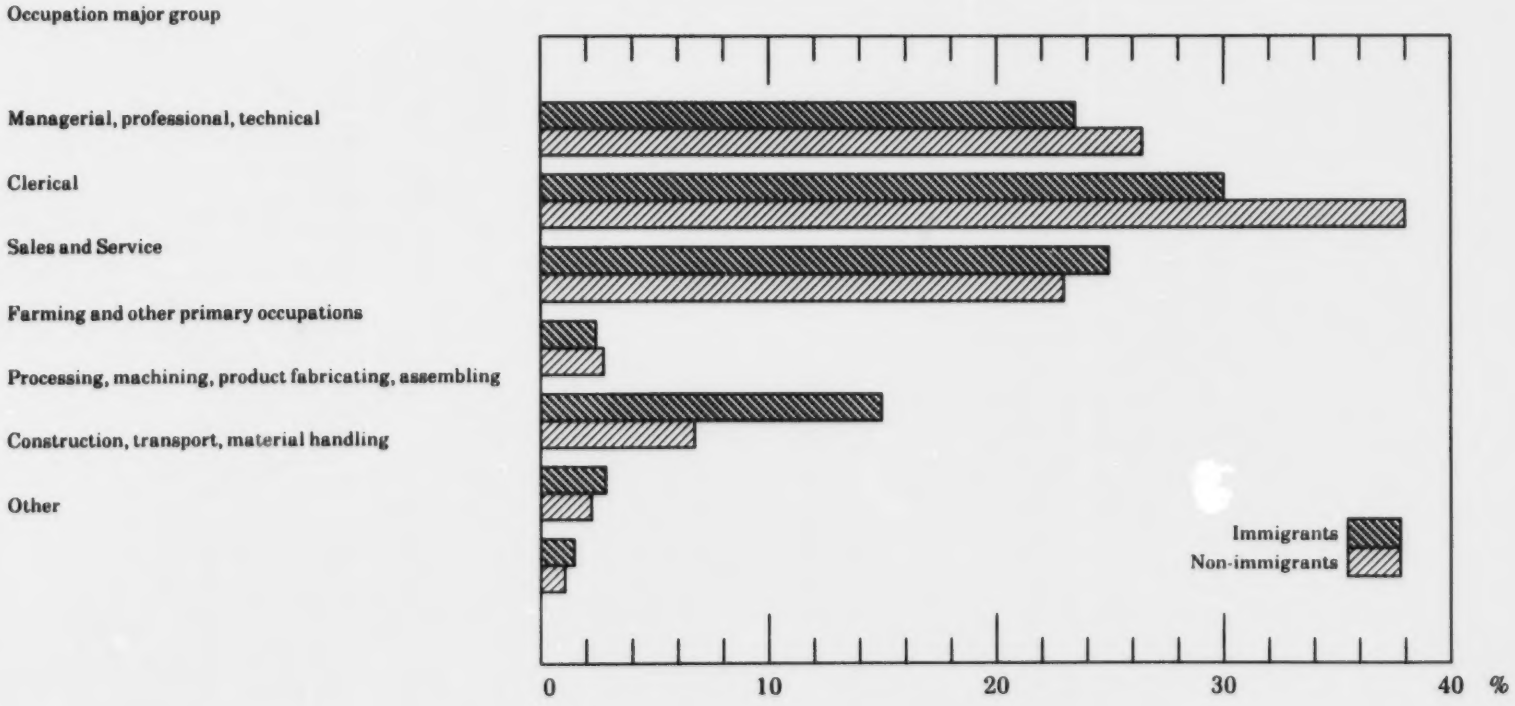
Percentage Distribution by Occupation: Major Groups of the Immigrant and Non-immigrant Male Labour Force 15 Years and Over Not Attending School Full-time, Canada, 1981



Source: Seward, S. (1987), Chart 1.

Chart 2

Percentage Distribution by Occupation: Major Groups of the Immigrant and Non-immigrant **Female** Labour Force
15 Years and Over Not Attending School Full-time, Canada, 1981



Source: Seward, S. (1987), Chart 2.

TABLE 1
Basic Demographic Data for Canada, 1976-1985, by Calendar Year

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985*	Average
Total Population on January 1	22,883,900	23,158,400	23,417,400	23,644,500	23,911,900	24,221,300	24,511,800	24,782,600	25,021,400	25,263,800	24,081,700
Births	360,400	360,700	360,200	366,100	370,700	371,300	373,100	373,700	377,000	379,100	369,200
Deaths	167,200	167,500	168,200	168,200	171,500	171,000	174,400	174,500	175,700	178,400	171,660
Natural Increase	193,200	193,200	192,000	197,900	199,200	200,300	198,700	199,200	201,300	200,700	197,540
Birth Rate (%)	1.57	1.55	1.53	1.55	1.55	1.53	1.51	1.50	1.51	1.50	1.53
Death Rate (%)	0.73	0.72	0.72	0.71	0.72	0.70	0.71	0.70	0.70	0.71	0.71
Rate of Natural Increase (%)	0.84	0.83	0.81	0.84	0.83	0.83	0.80	0.80	0.80	0.79	0.82
Immigration	149,400	114,900	86,300	112,100	143,100	128,600	121,100	89,200	88,200	84,300	111,720
Emigration	64,400	61,400	63,500	54,700	45,200	43,500	49,000	49,600	47,200	47,700	52,620
Net Migration	85,000	53,500	22,800	57,400	97,900	85,100	72,100	39,600	41,000	36,600	59,100
Net Migration Rate (%)	0.37	0.23	0.10	0.24	0.41	0.35	0.29	0.16	0.16	0.14	0.25
Total Annual Pop. Increase (1)	274,500	259,000	227,100	267,400	309,400	290,500	270,800	238,800	242,400	237,400	261,730
Residual (2)	-3,700	12,300	12,300	12,100	12,300	5,100	0	0	0	0	5,040
(%) Rate of Pop. Growth	1.20	1.12	0.97	1.13	1.29	1.20	1.10	0.95	0.96	0.93 (3)	1.09
% of Annual Growth from Natural Increase	70.4	74.6	84.5	74.0	64.4	69.0	73.4	83.4	83.0	84.5	76.1
% of Annual Growth from Net Migration	31.0	20.7	10.1	21.5	31.6	29.3	26.6	16.6	16.9	15.4	22.0
% of Annual Growth from Residual	-1.4	4.7	5.4	4.5	4.0	1.7	..	..	..	..	1.9
Total Fertility Rate	1.825	1.806	1.757	1.764	1.746	1.704	1.694	1.680	1.686	N/A	1.740

(1) Total Increase = $^{P}x+1 - {}^{P}x$.

(2) Residual: Total annual population increase between the 1976 Census and the 1981 Census, minus the sum of (i) the Intercensal estimate of natural increase and (ii) the Intercensal estimate of net migration. The residual thus accounts for "closure error", which is the difference between the actual Census counts and the Intercensal estimate of total annual population increase for that five-year period.

(3) Pop. January 1, 1986 = 25,501,200.

* Final data from 1976 to 1984 and preliminary data for 1985.

Source: Seward, S. (1987), Table 2.

TABLE 2
The Population and Labour Force of Canada, Census Years, 1951 - 1981

	1951	1956	1961	1966	1971	1976	1981
CANADA							
Population							
Total ('000)	14009	16081	18238	20015	21568	22993	24342
0 - 19 (%)	37.9	39.7	41.8	42.1	39.4	35.8	32.0
20 - 64 (%)	54.4	52.5	50.6	50.2	52.5	55.5	58.3
65+ (%)	7.8	7.7	7.6	7.7	8.1	8.7	9.7
Population Ratios							
0-19 / 20-64	0.70	0.76	0.83	0.84	0.75	0.65	0.55
65+ / 20-64	0.14	0.15	0.15	0.15	0.15	0.16	0.17
Females/Males, 65+	0.97	1.00	1.06	1.15	1.23	1.29	1.34
Labour Force ('000)	5274	5826	6556	7503	8649	10203	11904
15 - 24 (%)	24.6	22.7	21.9	24.1	25.8	26.9	25.8
25 - 44 (%)	44.9	46.2	45.4	43.0	42.6	44.7	47.6
45 - 64 (%)	25.9	26.9	28.9	29.5	29.2	26.7	24.9
65+ (%)	4.6	4.3	3.8	3.3	2.5	1.7	1.6
Labour Force Ratios							
Pop. 0-19 / LF	1.01	1.10	1.16	1.12	0.98	0.81	0.66
Pop. 65+ / LF	0.21	0.21	0.21	0.21	0.20	0.20	0.20
Total Pop. / LF	2.68	2.78	2.80	2.69	2.49	2.23	2.03
Females/Males	0.30	0.32	0.39	0.45	0.52	0.60	0.69
	– Regions, as Per cent of Canada Total –						
POPULATION							
Atlantic	11.5	11.0	10.4	9.9	9.5	9.5	9.2
Quebec	29.0	28.8	28.8	28.9	27.9	27.1	26.4
Ontario	32.8	33.6	34.2	34.8	35.7	35.9	35.4
Prairies	18.2	17.7	17.4	16.9	16.4	16.4	17.4
B.C.	8.3	8.7	8.9	9.4	10.1	10.7	11.3
LABOUR FORCE							
Atlantic	9.6	8.7	8.5	8.2	7.8	7.9	7.6
Quebec	27.7	27.6	27.6	28.2	27.2	26.4	25.5
Ontario	36.3	37.7	37.4	37.2	38.1	38.0	37.5
Prairies	18.2	17.3	17.7	16.8	16.6	16.8	17.9
B.C.	8.2	8.7	8.8	9.6	10.4	10.9	11.4

Note: The population figures relate to June 1 of each census year, while the labour force figures are annual averages. The labour force figures from 1951 to 1981 are based on estimates from the Statistics Canada Labour Force Survey. All labour force estimates prior to 1976 have been adjusted by the authors to make them consistent with new definitions introduced into the Labour Force Survey in the latter year. Components may not add precisely to totals because of rounding.

Source: Denton, F. and B. Spencer (1987, b), Table 1.

TABLE 3
Sources of Labour Force Growth
(average annual per cent rates of growth)

	1951-1956	1956-1966	1966-1973	1973-1979	1979-1983
Source Population	2.1	2.2	2.6	2.3	1.7
- Net Immigration	1.0	0.5	0.4	0.4	0.3
- Domestic	1.1	1.7	2.2	1.9	1.4
Participation Rate	-0.1	0.4	0.7	1.0	0.3
Total Labour Force	2.1	2.6	3.3	3.3	2.1

Source: Seward, S. (1987), Table 3.

TABLE 4
Components of Labour
Market Growth, Canada, 1975-1985

	Level[1]			Growth[2] (% p.a.)	
	1975	1980	1985	1975-80	1980-85
BOTH SEXES:					
Source Population	16.323	18.053	19.372	2.0	1.4
Participation Rate (%)	61.1	64.1	65.2	1.0	0.3
Labour Force	9.974	11.573	12.639	3.0	1.8
Employment	9.284	10.708	11.311	2.9	1.1
Unemployment	0.690	0.865	1.328	4.6	9.0
Unemployment Rate (%)	6.9	7.5	10.3	1.7	6.6
MALES:					
Source Population	8.026	8.847	9.468	2.0	1.4
Participation Rate (%)	78.4	78.4	76.7	0.0	-0.4
Labour Force	6.294	6.935	7.258	2.0	0.9
Employment	5.903	6.459	6.508	1.8	0.2
Unemployment	0.391	0.476	0.750	4.0	9.5
Unemployment Rate (%)	6.2	6.9	10.7	2.2	9.2
FEMALES:					
Source Population	8.297	9.206	9.904	2.1	1.5
Participation Rate (%)	44.4	50.4	54.3	2.6	1.5
Labour Force	3.680	4.638	5.382	4.7	3.0
Employment	3.381	4.249	4.804	4.7	2.5
Unemployment	0.299	0.389	0.578	5.4	8.2
Unemployment Rate (%)	8.1	8.4	10.5	0.7	4.6

Notes: 1 All levels in millions of persons unless otherwise indicated.
2 Average annual rate of growth.

Source: Foot, D. (1987, b), Table 2.

TABLE 5
The Population of Canada: Size, Growth, and Age-Distributional Characteristics, 1951-1986

Year (June 1)	Total population ('000)	% Increase (previous 5 years)	Age distribution (%)			Dependency ratios		
			Under 20	20-64	65+	Total pop. / Pop.20-64	Pop.under 20 / Pop.20-64	Pop.65+ / Pop.20-64
1951	14009	14.0	37.9	54.4	7.7	1.84	.70	.14
1956	16081	14.8	39.7	52.5	7.8	1.91	.76	.15
1961	18238	13.4	41.8	50.6	7.6	1.98	.83	.15
1966	20015	9.7	42.1	50.2	7.7	1.99	.84	.15
1971	21568	7.8	39.4	52.5	8.1	1.90	.75	.15
1976	22993	6.6	35.8	55.5	8.7	1.81	.65	.16
1981	24342	5.9	32.0	58.3	9.7	1.72	.55	.17
1986*	25591	5.1	28.9	60.5	10.7	1.65	.48	.18

* Preliminary estimates.

Source: Denton, F. and B. Spencer (1987, a), Table 1.

TABLE 6
Labour Force Source Population by Age, Canada, 1975-1985

	Population (millions)			Average Growth (% p.a.)	
	1975	1980	1985	1975-80	1980-85
BOTH SEXES:					
15-24 Years	4.297	4.554	4.244	1.2	-1.4
25-34 Years	3.428	4.027	4.410	3.3	1.8
35-44 Years	2.516	2.819	3.488	2.3	4.4
45-54 Years	2.420	2.454	2.498	0.3	0.4
55-64 Years	1.854	2.08[illegible]	2.294	2.4	1.9
65+ Years	1.808	2.11[illegible]	2.437	3.2	2.9
Total	16.323	18.053	19.372	2.0	1.4
Median Age (Years)	36.7	36.6	38.0	-0.1	0.8

Source: Foot, D. (1987, b), Table 3.

TABLE 7
Labour Force Composition
by Age and Gender, Canada, 1975 and 1985
(per cent)

	1975			1985		
	Males	Females	Total	Males	Females	Total
15-24 Years	14.9	12.2	27.1	11.9	10.7	22.6
25-34 Years	16.3	9.1	25.4	16.2	12.5	28.7
35-44 Years	12.2	6.5	18.6	13.1	9.7	22.8
45-54 Years	11.1	5.7	16.8	9.0	6.0	15.1
55-64 Years	7.1	2.9	10.1	6.1	3.2	9.3
65+ Years	1.5	0.5	2.0	1.0	0.5	1.5
Total	63.1	36.9	100.0	57.4	42.6	100.0

Source: Foot, D. (1987, b), Table 6.

TABLE 8
The Labour Force Participation of Women
1967-1986

Participation rates of women and men aged 25 years and over

YEAR	WOMEN	MEN	YEAR	WOMEN	MEN
	%	%		%	%
1967	32.3	84.5	1977	42.1	80.9
1968	32.8	84.0	1978	44.1	81.1
1969	33.8	83.8	1979	45.0	81.0
1970	34.5	83.3	1980	46.4	80.7
1971	35.4	82.7	1981	48.1	80.5
1972	36.2	82.3	1982	48.5	79.5
1973	37.6	82.3	1983	49.6	79.1
1974	38.5	82.2	1984	50.6	78.6
1975	40.0	81.9	1985	51.6	78.6
1976	41.1	81.1	1986	52.4	78.2
Change 1967/76	+27.2%	-4.3%	Change 1977/86	+24.5%	-3.3%

Source: Townson, M. (1987), Table 1.

TABLE 9
Family Types in Canada

	1961	1971	1981
	%	%	%
Husband-and-wife families			
One-earner couples[a]	65	32	16
Two-earner couples[b]	14	36	49
Other families[c]	16	23	24
Single-parent families[d]	6	9	11
Total	100	100	100

Notes: Totals may not add to 100% because of rounding.

a. One-earner couples refer to married couples, with or without children, in which only the husband is an income earner.

b. Two-earner couples refer to married couples, with or without children, in which both spouses are income-earners.

c. Other families include husband-wife families in which neither spouse is an income earner and families with more than two income earners.

d. Single parents refer to single adults, either male or female, with at least one child. The adult need not be an "income earner", i.e., includes single parents on government support.

Source: Townson, M. (1987), Table 3.

TABLE 10
Family income of husband-and-wife families with young children and labour force participation of wives 1984

	Families with children under 6 years		Families without children under 6 years	
	Wife in labour force	Wife not in labour force	Wife in labour force	Wife not in labour force
Average husband's income	$26,341	$27,307	$26,872	$23,051
Median husband's income	$25,398	$26,928	$24,790	$18,711
Average family income	$40,537	$28,974	$44,998	$29,964

Source: Townson, M. (1987), Table 20.

TABLE 11
Employment of Women and Men by Sector
1976 and 1986
Canada

	1976				1986			
	Male		Female		Male		Female	
	'000	%	'000	%	'000	%	'000	%
Primary								
Agriculture	357	6.0	115	3.3	338	5.1	145	2.9
Other Primary	220	3.7	15	0.4	256	3.8	35	0.7
Total	577	9.7	130	3.7	594	8.9	180	3.6
Secondary								
Manufacturing	1,426	23.9	495	14.1	1,443	21.7	573	11.5
Construction	592	9.9	43	1.2	563	8.5	65	1.3
Total	2,018	33.8	538	15.3	2,006	30.1	638	12.8
Tertiary								
Transportation, Communication and other utilities	664	11.1	160	4.6	681	10.2	217	4.4
Trade	985	16.5	659	18.8	1,196	18.0	886	17.8
Finance, insurance and real estate	210	3.5	286	8.1	262	3.9	392	7.9
Community, business and personal service	1,050	17.6	1,523	43.4	1,435	21.6	2,348	47.2
Public Administration	460	7.7	218	6.2	483	7.3	316	6.3
Total	3,369	56.5	2,846	81.0	4,057	61.0	4,159	83.6
TOTAL	5,964	100.0	3,513	100.0	6,657	100.0	4,977	100.0

Source: Townson, M. (1987), Table 5.

TABLE 12
The Projected Population, 1986-2036: Projection A ("Medium" Assumptions)

Year (June 1)	Total population ('000)	% Increase (previous 5 years)	Age distribution (%)			Dependency ratios		
			Under 20	20-64	65+	Total pop. / Pop.20-64	Pop.under 20 / Pop.20-64	Pop.65+ / Pop.20-64
1986*	25591	5.1	28.9	60.5	10.7	1.65	.48	.18
1991	26783	4.7	27.6	60.6	11.7	1.65	.45	.19
1996	27765	3.7	26.6	60.6	12.8	1.65	.44	.21
2001	28524	2.7	25.5	61.1	13.4	1.64	.42	.22
2006	29131	2.1	24.0	61.8	14.1	1.62	.39	.23
2011	29648	1.8	22.7	61.9	15.4	1.62	.37	.25
2016	30063	1.4	21.8	60.6	17.6	1.65	.36	.29
2021	30318	0.8	21.4	58.7	19.9	1.70	.37	.34
2026	30367	0.2	21.1	56.5	22.3	1.77	.37	.39
2031	30219	-0.5	20.7	54.8	24.4	1.82	.38	.45
2036	29909	-1.0	20.3	54.6	25.1	1.83	.37	.46

* Preliminary estimates.

Source: Denton, F. and B. Spencer (1987, a), Table 3.

TABLE 13
The Projected Labour Force and its Relationship to the Population, 1986-2036: Projection A ("Medium" Assumptions)

Year	Population ('000; June 1)	Labour force** ('000; annual average)	% Increase (previous 5 years)		Dependency ratio (Pop./LF)
			Population	Labour force	
1986*	25591	12898	5.1	7.6	1.98
1991	26783	13767	4.7	6.7	1.95
1996	27766	14494	3.7	5.3	1.92
2001	28524	15090	2.7	4.1	1.89
2006	29131	15364	2.1	1.8	1.90
2011	29648	15418	1.8	.3	1.92
2016	30063	15163	1.4	-1.7	1.98
2021	30318	14770	.8	-2.6	2.05
2026	30367	14408	.2	-2.5	2.11
2031	30219	14083	-.5	-2.3	2.15
2036	29909	13862	-1.0	-1.6	2.16

* Preliminary estimates.
** Includes the armed forces.

Source: Denton, F. and B. Spencer (1987, a) , Table 8.

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